

What Is Claimed Is:

1. An optical storage apparatus for writing and reading a storage medium using a laser beam, comprising:

5 a light source for emitting a laser beam onto said storage medium;

a servo control unit for performing follow up control of said laser beam onto said storage medium according to a reflected light from said storage medium;

10 an APC detector for monitoring the emission power of said light source; and

a control unit for calculating a drive instruction amount based on a detection output of said APC detector, and performs automatic power control of said light source
15 according to said drive instruction amount, so that the emission power on said storage medium is maintained to be a write power during said writing, and the emission power on said storage medium is maintained to be a read power during said reading;

20 wherein said control unit measures a inclination of a relationship between said drive instruction amount and the detection output of said APC detector, and judges the abnormality of said APC detector by comparing the pre-measured inclination of the relationship between said drive
25 instruction amount and the detection output of said APC detector with said measured inclination.

2. The optical storage apparatus according to Claim 1,
wherein said control unit measures the detection output of
said APC detector when said light source is driven with said
drive instruction amount, and measures the inclination of
5 the relationship between said drive instruction amount and
said detection output.

3. The optical storage apparatus according to Claim 1,
wherein said control unit measures the inclination of the
10 relationship between said drive instruction amount and the
detection output of said APC detector when loading of said
storage medium.

4. The optical storage apparatus according to Claim 1,
15 wherein said control unit judges the abnormality of said APC
detector by comparing a value obtained by dividing said
measured inclination by a pre-measured inclination with the
threshold value.

20 5. The optical storage apparatus according to Claim 1,
wherein said control unit performs said automatic power
control with an arbitrary time interval, and measures the
inclination of the relationship between said drive
instruction amount and the detection output of said APC
25 detector from said drive instruction amount at the start of
said automatic power control.

6. An optical storage apparatus for writing and reading a storage medium using a laser beam, comprising:

a light source for emitting a laser beam onto said storage medium;

5 a servo control unit for performing follow up control of said laser beam onto said storage medium based on the reflected light from said storage medium; and

a control unit for calculating a drive instruction amount according to the error value between the detection
10 output of said APC detector and the reference value, and performing automatic power control of said light source according to said drive instruction amount, so that the emission power on said storage medium is maintained to be a write power during said writing, and the emission power on
15 said storage medium is maintained to be a read power during said reading,

wherein said control unit performs said automatic power control with an arbitrary time interval, and judges the abnormality of said APC detector by measuring said error
20 values for a plurality of times and comparing said error values measured for the plurality of times in a state with said drive instruction amount fixed.

7. The optical storage apparatus according to Claim 6,
25 wherein said control unit judges the abnormality of said APC detector by comparing the difference of said error values measured for the plurality of times with the threshold value.

8. An optical storage apparatus for writing and reading a storage medium using a laser beam, comprising:

a light source for emitting a laser beam onto said
5 storage medium;

a servo control unit for detecting reflected light from said storage medium and performing follow up control of said laser beam onto said storage medium;

an APC detector for monitoring an emission power of
10 said light source; and

a control unit for calculating a drive instruction amount based on the detection output of said APC detector and performing automatic power control of said light source according to said drive instruction value, so that the
15 emission power on said storage medium is maintained to be a write power during said writing, and the emission power on said storage medium is maintained to be a read power during said reading,

wherein said control unit measures an average value of
20 quantities of said reflected light during a predetermined period, and judges the abnormality of said APC detector by comparing the average value of the quantities of the reflected light with the pre-measured average value of the quantities of the reflected light.

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9. The optical storage apparatus according to Claim 8, wherein said control unit judges the abnormality of said APC

detector by comparing the ratio between both said average values with the threshold value.

10. An abnormality detection method of a detector for
5 emission control, comprising the steps of:

performing automatic power control of a light source which emits a laser beam for writing and reading a storage medium onto said storage medium according to a drive instruction amount calculated based on a detection output of
10 an APC detector for monitoring the emission power of said light source, so that the emission power on said storage medium is maintained to be a write power during said writing, and the emission power on said storage medium is maintained to be a read power during said reading;

15 measuring an inclination of a relationship between said drive instruction amount and the detection output of said APC detector; and

judging the abnormality of said APC detector by comparing a pre-measured inclination of the relationship
20 between said drive instruction amount and said detection output of said APC detector with said measured inclination.

11. The abnormality detection method of a detector for emission control according to Claim 10, wherein said
25 measurement step comprises a step of measuring the detection output of said APC detector when said light source is driven with said drive instruction amount, and a step of measuring

the inclination of the relationship between said drive instruction amount and said detection output.

12. The abnormality detection method of a detector for
5 emission control according to Claim 10, wherein said
measuring step comprises a step of measuring the inclination
of the relationship between said drive instruction amount
and the detection output of said APC detector when said
storage medium is loaded.

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13. The abnormality detection method of a detector for
emission control according to Claim 10, wherein said
judgment step comprises a step of judging the abnormality of
said APC detector by comparing a value obtained by dividing
15 said measured inclination by a pre-measured inclination with
the threshold value.

14. The abnormality detection method of a detector for
emission control according to Claim 10, wherein said
20 measurement step comprises a step of performing said
automatic power control with an arbitrary time interval, and
a step of measuring the inclination of the relationship
between said drive instruction amount and the detection
output of said APC detector from said drive instruction
25 amount at the start of said automatic power control.

15. An abnormality detection method of a detector for

emission control, comprising:

a control step of performing automatic power control of a light source which emits a laser beam for writing and reading a storage medium onto said storage medium according to a drive instruction amount calculated based on an error value between a detection output of an APC detector for monitoring an emission power of said light source and a reference value, so that the emission power on said storage medium is maintained to be a write power during said writing, and the emission power on said storage medium is maintained to be a read power during said reading;

a step of performing said automatic power control with an arbitrary time interval and measuring said error values for a plurality of times in a state with said drive instruction amount fixed; and

a step of judging the abnormality of said APC detector by comparing the error values measured for the plurality of times.

16. The abnormality detection method of a detector for emission control according to Claim 15, wherein said judgment step comprises a step of judging the abnormality of said APC detector by comparing a difference of error values measured for two or more times out of said plurality of times with the threshold value.

17. An abnormality detection method of a detector for

emission control, comprising:

a control step of performing automatic power control of a light source which emits a laser beam for writing and reading a storage medium onto said storage medium according to a drive instruction amount calculated based on a detection output of an APC detector for monitoring an emission power of said light source, so that the emission power on said storage medium is maintained to be a write power during said writing, and the emission power on said storage medium is maintained to be a read power during said reading;

a step of measuring the average value of quantities of a reflected light from said storage medium during a predetermined period; and

a step of judging the abnormality of said APC detector by comparing said measured average value of the quantities of the reflected light with a pre-measured average value of the quantities of the reflected light.

18. The abnormality detection method of a detector for emission control according to Claim 17, wherein said judgment step comprises a step of judging the abnormality of said APC detector by comparing the ratio of both said average values and the threshold value.